

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A protection structure of a first area of a semiconductor wafer including a lightly-doped substrate of a first conductivity type against high-frequency noise likely to be injected from components formed in the upper portion of a second area of the wafer, comprising:

a ~~very~~-heavily-doped wall of the first conductivity type having substantially the depth of said upper portion, wherein said wall is divided into segments, each of which is connected to a ground plane via an assembly of flip chip type.

2. (Original) The protection structure of claim 1 wherein the first conductivity type is type P.

3. (Original) The protection structure of claim 1 wherein the impedance between two successive segments is greater than the grounding impedance of each segment.

4. (Original) The protection structure of claim 1 wherein the isolating wall is surrounded with a medium-doped area of the first conductivity type.

5. (Currently Amended) A device comprising:
a semiconductor substrate; and
a plurality of heavily doped segments of a first conductivity type formed in an upper portion of the semiconductor substrate, the segments configured to form a broken line enclosing a region of the semiconductor substrate, each of the segments being configured to connected to a circuit ground via a flip-chip type connection.

6. (Original) The device of claim 5, further including a plurality of metalizations, each of the metalizations formed over and in contact with a respective one of the plurality of heavily doped segments.

7. (Original) The device of claim 6 wherein the metalizations are wider than the heavily doped segments.

8. (Currently Amended) A device comprising:
a semiconductor substrate;
a plurality of heavily doped segments formed in an upper portion of the semiconductor substrate, the segments configured to form a broken line enclosing a region of the semiconductor substrate, each of the segments being connected to a circuit ground;
a plurality of metalizations, each of the metalizations formed over and in contact with a respective one of the plurality of heavily doped segments; and
~~The device of claim 6 wherein a solder ball is formed on each of the plurality of~~
metalizations.

9 (Currently Amended) A device comprising:
a semiconductor substrate;
a plurality of heavily doped segments formed in an upper portion of the semiconductor substrate, the segments configured to form a broken line enclosing a region of the semiconductor substrate, each of the segments being connected to a circuit ground,
and
~~The device of~~
~~claim 5 wherein the impedance between any two adjacent segments is being greater than the~~
grounding impedance of each segment.

10. (Original) A device comprising:
a semiconductor substrate;

a plurality of heavily doped segments formed in an upper portion of the semiconductor substrate, the segments configured to form a broken line enclosing a region of the semiconductor substrate, each of the segments being connected to a circuit ground;

~~The device of claim 5 wherein a region of the semiconductor substrate surrounding the segments is doped at a medium level of the first conductivity type, the region forming a continuous line superimposed by the broken line of heavily doped segments.~~

11-13. (Cancelled)

14. (New) A device comprising:

a semiconductor substrate;

a logic circuit formed in the substrate;

an analog circuit formed in the substrate; and

a plurality of heavily doped segments formed in the semiconductor substrate, the segments configured to form a broken line between the logic circuit and the analog circuit, each of the segments being configured to connect to a circuit ground.

15. (New) The device of claim 14 wherein each of the segments is configured to connect to a circuit ground via a flip-chip type connection.

16. (New) The device of claim 14 wherein the logic circuit is configured to operate at frequencies greater than 1 GHz.